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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/817,932	03/27/2001	Daniel P. Bybell	8480 (PMC)	3935

20349 7590 11/29/2004

POLAROID CORPORATION
PATENT DEPARTMENT
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EXAMINER	
LEE, TOMMY D	
ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/817,932	BYBELL ET AL.	
	Examiner	Art Unit	
	Thomas D. Lee	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 16-20* is/are rejected.

7)☒ Claim(s) *13-15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20010327*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-12 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,130,821 (Ng).

Regarding claims 1-12, Ng discloses a method for generating a halftone of a source image (comprising a digital image including a two-dimensional array of source image pixels, and wherein the regions in the source image comprise the source image pixels (column 3, line 35 – column 4, line 8), the halftone including halftone pixels, the halftone pixels being suitable for containing halftone dots, the method comprising steps of: (A) selecting *templates* corresponding to regions in a source image, the *templates* including halftone dots (column 6, lines 60-64 (Ng's template selection is equivalent to applicant's glyph selection, for Ng's templates dictate the placement of halftone dots within a given area on the basis of density values of the source image); (B) selecting, from among the halftone pixels, a first halftone pixel and a second halftone pixel that share a pixel boundary (template to be used for a object halftone cell selected on the basis of neighboring or adjacent halftone cells, which by definition share a common boundary with the object halftone cell (column 6, lines 53-56)); (C) locating a first one of the halftone dots within the first halftone pixel so that the first halftone dot abuts the pixel boundary (among selectable template patterns are those with dots aligned along the borders or at edge regions of the halftone cell (column 5, line 59 – column 6, line 10)); (D) locating a second one of the halftone dots within the second halftone pixel so that the second halftone dot abuts the pixel boundary (given that templates may be selected so that halftone dots are located at the edges or borders of a halftone cell, halftone dots within adjacent cells 20 and 22 (Fig. 2) would be placed along the

boundary separating the cells, the boundary (which is horizontal) being perpendicular to a slow scan (vertical) direction of an output device on which the halftone may be rendered); and (E) rendering the halftone on an output medium using an output device (column 6, lines 60-68), the first and second halftone dots rendered as a single dot (adjacent dots printed along a boundary inherently appear as a single dot or contiguous mark). The templates correspond to a source image pixel and comprise a two-dimensional array of halftone pixels or a single halftone pixel (column 6, lines 49-53 (a two-dimensional array inherently comprises a plurality of individual pixels, each of which is compared with a threshold value in the template)). The size of the halftone dot of a glyph, indicative of a region's darkness, is inversely related to the intensity (brightness) of the source image region that corresponds to the glyph. The first and second halftone dots are selected from one of the templates, wherein the first and second halftone dots are in adjacent pixels within the selected template (noting Figs. 14 and 15, adjacent template thresholds values 4, 35, 75, 60, 20 selected for relocation to the upper left-hand edge region of the template).

As mentioned above, while Ng uses templates as opposed to glyphs, the templates serve as a functional equivalent since they dictate the placement of halftone dots within a given area on the basis of density values of the source image, and thus one of ordinary skill in the art would be motivated to use either glyphs or templates in the digital halftoning method disclosed in Ng.

While Ng does not disclose an output device comprising a *thermal* printer, it would have been obvious to one of ordinary skill in the art that Ng's halftoning method is

applicable for any type of printer that prints halftone dots, including thermal printers. Since there is no apparent advantage or unexpected result disclosed by applicant for using a thermal printer as opposed to other types of printers, one of ordinary skill would be motivated to use any type of printer as a matter of design choice. As mentioned above, adjacent dots printed along a boundary inherently appear as a single dot or contiguous mark.

Regarding claims 16 and 17, the method disclosed in Ng comprises steps of (A) (1) identifying intensities of the regions of the source image (data applied to halftone cell generator (column 6, lines 44-47)); (A) (2) selecting templates (equivalent to applicant's glyphs, as mentioned above) corresponding to the identified intensities (column 6, lines 60-64); and (A) (3) selecting halftone dots from the templates based on the coordinates of the source image regions (column 6, lines 49-53).

Regarding claim 18, in the method disclosed in Ng, the first one of the halftone dots is contained within a first pixel of a selected one of the glyphs, wherein the second one of the halftone dots is contained within a second pixel of the selected one of the glyphs, and wherein: the step (C) comprises locating the first one of the halftone dots within the first halftone pixel based on a location of the first one of the halftone dots within the first pixel of the select one of the glyphs; and wherein the step (D) comprises locating the second one of the halftone dots within the second halftone pixel based on a location of the second one of the halftone dots within the second pixel of the select one of the glyphs (placement of dots within each halftone cell based on density of source pixels and pixels in neighboring or adjacent cells (column 6, lines 49-56)).

Regarding claim 19, Ng discloses a method for generating a halftone of a digital source image including a two-dimensional array of source image pixels, the halftone including halftone pixels, the halftone pixels being suitable for containing halftone dots, the method comprising steps of: (A) selecting halftone dots corresponding to source image pixels, the size of each of the halftone dots being inversely related to the intensity of one of the source image pixels (size of the halftone dot of a glyph, indicative of a region's darkness, is inversely related to the intensity (brightness) of the source image region that corresponds to the glyph, as mentioned above); (B) selecting, form among the halftone pixels, a first halftone pixel and a second halftone pixel that share a pixel boundary that is perpendicular to a slow scan direction of an output device on which the halftone may be rendered (template to be used for a object halftone cell selected on the basis of neighboring or adjacent halftone cells, which by definition share a common boundary with the object halftone cell (column 6, lines 53-56)); (C) locating a first one of the halftone dots within the first halftone pixel so that the first halftone dot abuts the pixel boundary (among selectable template patterns are those with dots aligned along the borders or at edge regions of the halftone cell (column 5, line 59 – column 6, line 10)); (D) locating a second one of the halftone dots within the second halftone pixel so that the second halftone dot abuts the pixel boundary (given that templates may be selected so that halftone dots are located at the edges or borders of a halftone cell, halftone dots within adjacent cells 20 and 22 (Fig. 2) would be placed along the boundary separating the cells, the boundary (which is horizontal) being perpendicular to a slow scan (vertical) direction of an output device on which the halftone may be

rendered); and (E) rendering the halftone on an output medium using a printer, wherein the step of rendering includes a step of rendering the first and second halftone dots (column 6, lines 60-68).

While Ng does not disclose an output device comprising a *thermal* printer, it would have been obvious to one of ordinary skill in the art that Ng's halftoning method is applicable for any type of printer that prints halftone dots, including thermal printers. Since there is no apparent advantage or unexpected result disclosed by applicant for using a thermal printer as opposed to other types of printers, one of ordinary skill would be motivated to use any type of printer as a matter of design choice. As mentioned above, adjacent dots printed along a boundary inherently appear as a single dot or contiguous mark.

Regarding claim 20, Ng discloses a method for generating a halftone of a digital source image including a two-dimensional array of source image pixels, the halftone including halftone pixels, the halftone pixels being suitable for containing halftone dots, the method comprising the steps of: (A) identifying intensities of the source image pixels (data applied to halftone cell generator (column 6, lines 44-47)); (B) selecting templates corresponding to the identified intensities, the templates including halftone dots (column 6, lines 60-64 (Ng's template selection, as mentioned above, is equivalent to applicant's glyph selection, for Ng's templates dictate the placement of halftone dots within a given area on the basis of density values of the source image); (C) selecting halftone dots from the templates based on the coordinates of the source image pixels (column 6, lines 49-53); (D) selecting, from among the halftone pixels, a first halftone pixel and a second

halftone pixel that share a pixel boundary that is perpendicular to a slow scan direction of an output device on which the halftone may be rendered (template to be used for a object halftone cell selected on the basis of neighboring or adjacent halftone cells, which by definition share a common boundary with the object halftone cell (column 6, lines 53-56)); (E) locating a first one of the halftone dots within the first halftone pixel so that the first halftone dot abuts the pixel boundary (among selectable template patterns are those with dots aligned along the borders or at edge regions of the halftone cell (column 5, line 59 – column 6, line 10)); (F) locating a second one of the halftone dots within the second halftone pixel so that the second halftone dot abuts the pixel boundary (given that templates may be selected so that halftone dots are located at the edges or borders of a halftone cell, halftone dots within adjacent cells 20 and 22 (Fig. 2) would be placed along the boundary separating the cells, the boundary (which is horizontal) being perpendicular to a slow scan (vertical) direction of an output device on which the halftone may be rendered); and (G) rendering the halftone on an output medium using a printer, wherein the step of rendering includes a step of rendering the first and second halftone dots (column 6, lines 60-68).

As mentioned above, while Ng uses templates as opposed to glyphs, the templates serve as a functional equivalent since they dictate the placement of halftone dots within a given area on the basis of density values of the source image, and thus one of ordinary skill in the art would be motivated to use either glyphs or templates in the digital halftoning method disclosed in Ng.

As mentioned above, while Ng does not disclose an output device comprising a *thermal* printer, it would have been obvious to one of ordinary skill in the art that Ng's halftoning method is applicable for any type of printer that prints halftone dots, including thermal printers. Since there is no apparent advantage or unexpected result disclosed by applicant for using a thermal printer as opposed to other types of printers, one of ordinary skill would be motivated to use any type of printer as a matter of design choice. As mentioned above, adjacent dots printed along a boundary inherently appear as a single dot or contiguous mark.

Allowable Subject Matter

6. Claims 13-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: No prior art has been found to disclose or suggest a step of positioning a third halftone dot within a third halftone pixel that is adjacent to the first halftone pixel in the manner set forth in steps (E) (1) and (E) (2) of claim 13. Claims 14 and 15 are objected to in view of their dependence from claim 13.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas D. Lee whose telephone number is (703) 305-4870. The examiner can normally be reached on Monday-Friday (7:30-5:00), alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (703) 308-7452. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thomas D. Lee
Primary Examiner
Art Unit 2624

tdl
November 26, 2004